Enterprise Risk Management: A Process for Enhanced Management and Improved Performance

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Some company boards of directors and management teams are still reluctant to embrace enterprise risk management (ERM) because of the uncertainty regarding its value to the bottom line. A survey of audit and risk management executives suggests that the use of ERM leads to increased management consensus, better-informed decisions, enhanced communication of risk taking, and greater management accountability.

Risk management is an important topic in today's business environment. One approach that is being heavily advocated—and even mandated in some places—is enterprise risk management (ERM), a "process" that can help a company identify risk events and manage the related risks.[1] Whether it's coming from the U.S. Securities & Exchange Commission (SEC), U.S. and foreign stock exchange regulations, legal court cases, or even Standard & Poor's decision to incorporate a company's ERM efforts into its company ratings, increased pressure is being placed on companies around the world to identify and manage their risks. In the United States, the SEC passed Rule 33-9089 in 2009, which mandated risk oversight by company boards of directors. Countries such as South Africa, the United Kingdom, and

Australia have all moved toward requiring or strongly suggesting that companies adopt some form of ERM. As this movement grows, however, there is still uncertainty about the effects of ERM and how the process creates added value.

Prior Research and the COSO Framework

Despite the growing interest in ERM, there exists little research examining its value. Early field-based research in 2002 revealed how major U.S. companies such as Microsoft and Walmart try to manage their risks.[2] Further studies followed that focused on ERM determinants or adoption and ERM disclosures.[3] In 2009, two studies attempted to determine ERM's added value by quantifying it through a cost-benefit approach: Laurent Cappelletti illustrated a method to calculate the hidden costs of the lack of internal control and risk management, and Brian Ballou, Dan Heitger, and Thomas Schultz described the direct and indirect costs of reducing risks and suggested how companies can better align the net benefits of reducing risks with their risk appetites.[4]

While quantifying the cost-benefit of ERM demonstrates its value, another approach is to show how ERM can help an organization attain strategic goals. For example, in separate studies, William G. Shenkir and Paul. L. Walker and Mark Beasley, Al Chen, Karen Nunez, and Lorraine Wright demonstrated how a company can leverage the balanced scorecard to support an ERM view of risk.[5] In a survey of executives and managers, Ananth Rao and Attiea Marie found dissatisfaction with the link between ERM and strategy and proposed a strategic approach to ERM that focuses on the impact that risks have on key performance indicators.[6]

In 2009, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) reinforced the strategic approach to ERM by emphasizing the contribution it can make to delivering on a company's strategic goals.[7] Starting with the definition of ERM as "a process, effected by the entity's board of directors, management, and other personnel, applied in strategy setting and across the enterprise...," COSO recommended four practices focused on the interaction between management and the board of directors:

1. Discuss risk management philosophy and risk appetite,
2. Understand risk management practices,
3. Review portfolio risks in relation to risk appetite, and
4. Be apprised of the most significant risks and risk responses.

In light of the SEC's Rule 33-9089, COSO's four practices provide helpful guidelines to demonstrate that boards are fulfilling this fiduciary duty. Nevertheless, three recent surveys of board members reported major gaps. A survey from KPMG's Audit Committee Institute revealed the top concern of the board's audit committee was the link between strategy and risk.[8] Concerning each of the four COSO recommendations, the survey results showed:

1. Few organizations have developed risk-appetite statements,
2. Boards have limited information regarding actual ERM practices,
3. Organizations are moving to ERM by integrating risks across business units and risk types, and
4. Boards are not sufficiently informed regarding key risks and potential responses.

Curiously, while 70% of respondents wanted more information about strategic risks, two-thirds of the board members considered the information effective for their risk management duties.

In another survey, Mark Beasley, Bruce Branson, and Bonnie Hancock reported that a significant percentage of respondents indicated that there were either no processes or minimal ones in place to identify or track emerging risks, and an even lower percentage of respondents stated that their companies monitor key risk indicators.[9] To explain why risk oversight processes remain immature, these board members maintained that management does not see the interconnectivity of risk oversight and strategy execution.

Two reasons for the lack of improvement in risk oversight are the uncertainty surrounding the value proposition of investing more in risk management (which is viewed as a compliance activity, not a strategic

one) and management's and the board's overconfidence in their company's current approach to risk oversight. Another obstacle was found in a study commissioned in 2010 by COSO, in which board members indicated that the top obstacle to improving risk oversight was that there were more pressing needs.[10]

The result is that many board members are only reluctantly carrying out their duties to oversee risk—despite the increasing legal requirements to demonstrate that they are carrying out their risk oversight fiduciary duty. Boards and management want to know that ERM adds value—and how it does so—before they will embrace it.[11] Early research shows that risk management adds value by removing lower tail outcomes.[12] It also leads to better efficiency, better understanding of risks, a better basis for resource allocation, reduced earnings volatility (via aggregation as opposed to a single source), decreased regulatory costs, and better transparency with outsiders.[13]

ERM Survey

COSO's *Enterprise Risk Management—Integrated Framework* details eight components to help a company both manage risk and provide reasonable assurance about meeting objectives: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring. Companies publicly provide the most information on the internal environment, objective setting, event identification, and risk assessment components. The tendency to disclose these components is most likely because they occur early in an ERM process. Information is generally harder to find regarding companies' practices related to risk response, control activities, information and communication, and monitoring.

With advice from risk management consulting professionals, we designed a survey of corporate ERM practices to study the practical value side of ERM. The survey questions measured the following components of ERM: objective setting, risk identification, risk reaction, oversight, information and communication, internal environment, management, and performance. (Risk identification is a combination of the risk response and risk assessment COSO components, while observation is a combination of the control activities and monitoring components.) Table 1 shows the survey measures grouped by their related components. We used multiple measures for each component. For example, we captured the performance component through the survey responses to questions about risk-adjusted performance, meeting strategic goals, reduced earnings volatility, and increased profitability.

During the summer of 2004, we sent 1,000 surveys to audit and risk management executives from companies that are members of The Conference Board. The advantage of this timeframe is that it predates the current global economic recession. ERM value may be easier to capture and understand during this earlier timeframe rather than in the middle of a global economic crisis that contains substantial systemic risk.

After a second mailing and telephone follow-up, we had received 271 surveys, a 27% response rate, which is in line with other surveys of internal auditors.[14] Since 121 respondents reported that their company was either in the planning stage or had not considered implementing an ERM system, the final sample was 150 companies.

The survey also asked about organizational characteristics. We included four control variables in the survey. *Revenue* was a proxy for company size, and *business* controlled for industry differences. *Country* captured the country in which the business operates, and *ERM stage* controlled how far along the company has advanced in their ERM process. (Research shows industry influences the stage of ERM, and U.S. firms are not as advanced as non-U.S. firms in ERM development.[15]) In regard to the control variables, here are some statistics related to respondents' companies:

- 40% were in the fields of energy, financial services, banking, or insurance,
- 55% of had reported revenue of more than $5 billion,
- 57% were in the U.S., and
- 59% were implementing ERM or maintaining and monitoring it.

Hypotheses

We devised seven hypotheses to be tested. Each hypothesis is related to the structured component approach.

Table 1. ERM Components and Related Survey Measures

Component	Survey Item
Objective setting	1. Has aligned its business risks with its corporate-level and business-unit-level goals and objectives
	2. Has established explicit, corporate-wide risk tolerance levels or limits for all major risk categories
	3. Has clearly communicated its expectations for risk-taking to senior managers
Identification	1. Has established a comprehensive business risk inventory of the risks you expect your managers to manage
	2. Its business units utilize facilitated self-assessment and/or survey techniques to map risks
Risk reaction	1. Conducts formal risk assessment across the company on a regular basis
	2. Its business units analyze the root cause, impact, and interrelationships of its risks
	3. Has quantified its key risk to the best extent possible
	4. Has a process to integrate the effects of the major risk types (strategic, operational, financial, hazard, and legal)
	5. Its business units develop and determine risk mitigation strategies
Oversight	1. Has established written risk policy and procedure manuals that are consistent across major risks
	2. Its business units monitor and report on current status of managing key risks
	3. Has identified the key metrics required for reporting on risk management performance
Information and Communication	1. Has a corporate-wide common language for communicating risk-type exposures, control activities, and monitoring efforts
	2. Has regular briefs to the board and executive committee on risk management issues
Internal environment	1. Has communicated a risk management mission statement, value proposition, and benefits statement to senior managers
	2. Has incorporated responsibility for risk management into the position description of all managers
	3. Board of directors or committee of the board is actively involved in the risk management process
Management	1. Perceived benefit of ERM on company's general management consensus
	2. Perceived benefit of ERM on company's ability to make better-informed decisions
	3. Perceived benefit of ERM on company's ability to articulate and communicate risk taking to the management board and outside stakeholders
	4. Perceived benefit of ERM on increased company management accountability
Performance	1. Perceived benefit of ERM to measure risk-adjusted performance among business units
	2. Perceived benefit of ERM to increase ability to meet strategic goals
	3. Perceived benefit of ERM to reduce earnings volatility
	4. Perceived benefit of ERM to increase profitability

Objective Setting

As one of the first steps in an ERM process, setting objectives is a precondition to such components as risk identification, risk assessment, and risk response. Most ERM frameworks state that risks should be identified based on the company's objectives. COSO's Framework notes that these objectives should align with a company's risk appetite and tolerance levels. We used three indicators to capture how companies aligned risks with objectives, established risk-tolerance levels, and communicated risk expectations. Since setting objectives should be an important first step that leads to risk identification, we believe there will be a significant association between these constructs. That leads to the following hypothesis:

> **Hypothesis 1:** A positive association exists between objective setting and risk identification, i.e., better objective setting leads to better risk identification.

Risk Identification

An organization should try to identify the risks related to its objectives. We used two indicators to capture risk identification. The first is related to the use of a comprehensive risk inventory. For example, COSO states that companies might use risk-event categories. The second indicator is whether the company utilizes assessments or surveys to map identified risks. According to COSO and the American Institute of Certified Public Accountants (AICPA), there are numerous ways companies can identify risks.[16] Clearly, companies must first identify their risks before they can react to them, and this leads to our next hypothesis:

> **Hypothesis 2:** A positive association exists between risk identification and risk reaction.

Risk Reaction

Companies can react to identified risks in a variety of ways. We built the risk reaction construct to encompass the two related components of risk assessment and risk response. Risk assessment, where companies assess identified risks along the dimensions of impact and likelihood, considers data sources, varying perspectives, qualitative and quantitative techniques, and the relationships between events. We used three indicators of risk assessment: conducting formal risk assessments, analyzing root cause and impact, and quantifying risk. Companies should respond and react to their assessments because they have more and better knowledge.

Response techniques included risk avoidance, risk reduction, risk sharing, and risk acceptance. We used two indicators of risk response. The first indicator addresses having a process to integrate the effects of the risks; the second indicator examines risk-mitigation strategies. As companies begin to assess and quantify risk, analyze the root cause, integrate risks, and develop mitigation strategies, we believe this should have an impact on management's ability to oversee risks:

> **Hypothesis 3:** A positive association exists between risk reaction and risk oversight.

Oversight

After companies have established objectives, identified risks, and developed a risk reaction, they can develop control activities and monitoring procedures. For simplicity, we combined the two COSO ERM components—control activities and monitoring—into one ERM construct—oversight. SEC Rule 33-9089 mandates the disclosure of risk oversight. Control activities are typically the policies and procedures a company uses, and monitoring is the "ongoing management activities." Our indicators in these areas cover policy and procedure manuals, actual business-unit monitoring, and identification of related metrics. Companies with the right controls, metrics, monitoring, and oversight in place should have better information than they had before implementing an ERM process:

> **Hypothesis 4:** A positive relationship exists between oversight and information and communication.

Information and Communication

According to COSO, "information and communication" means that companies identify and communicate relevant information. It also means that information is identified at all levels across the company, so a company not

only identifies risks but assesses them and develops a proper response. We used indicators that address both a common risk language for communicating and providing regular briefs to the board and executives. We expect that better information and communication will impact the company's internal environment:

> **Hypothesis 5:** A positive relationship exists between information and communication and the internal environment.

Internal Environment, Management, and Performance

The internal environment component captures the traditional idea of the "tone at the top," but it includes much more, such as risk consciousness, risk appetite, risk philosophy, and board oversight. We used three proxies for internal environment under an ERM framework: having a risk mission statement, including risk in job responsibilities, and having the board involved in risk management efforts. This emphasis and environment leads to an increased management focus. In 2011, the SEC's director of the Office of Compliance Inspections and Examinations stated that the business and supporting functions (ethics, risk management office, and internal audit) are the first lines of defense and that senior management reinforcing the tone and culture is the next line of defense.[17]

COSO noted that management decisions create value and enhance performance. For example, management needs to consider the risk appetite, set objectives, identify risks, identify risk responses, consider risk alternatives, assess capital needs for the risks, etc. To capture management decisions, we used four indicators to address whether the company now has greater management consensus, makes better-informed decisions, better communicates risk to the board and shareholders, and has increased accountability.

Both COSO and ISO support the idea of value being part of an ERM process. According to COSO, a company maximizes value when management sets strategy to balance growth and risks and when management correctly uses resources as it pursues objectives and manages the related risk. The central idea is that value is created, and, therefore, performance is enhanced. Our indicators of performance included risk-adjusted performance, increased ability to meeting strategic goals, reduced earnings volatility, and increased profitability.

COSO notes that value is created and performance is enhanced by management decisions. Examples of the decisions made by management include considering the risk appetite, setting objectives, identifying risks, identifying risk responses, considering risk alternatives, and assessing capital needs for the risks. Therefore, our second construct captures management decisions. We use four indicators of enhanced management. The indicators address whether the company now has greater management consensus, makes better-informed decisions, communicates risk better (to the board and shareholders), and has increased accountability. The hypotheses for the internal environment, management, and performance constructs are:

> **Hypothesis 6:** A positive relationship exists between internal environment and management.

> **Hypothesis 7:** A positive relationship exists between management and performance.

Research Results

To test the hypotheses, we utilized a partial least squares (PLS) analysis (PLS PM Version 2008). PLS explains variance among a large number of indicators for each latent variable even for relatively small samples. Since our sample size (n=150) was relatively small, the PLS analytical technique was a good fit.

Using a statistical technique called the reflective method, we elaborated the "synthetic" latent variables, represented by the eight components of the COSO ERM framework, from the survey questions, which take the name of manifest variables. An exploratory analysis revealed the variables with the most explanatory power, and the PLS analysis then measured the direct and indirect effects between the latent variables, confirming or invalidating the theoretical model. Figure 1 summarizes the constructs and hypotheses for the research model. Each of the ERM concepts is named and hypothesized to have a direct influence on the subsequent ERM concept, as expressed in our hypotheses,

which are generated from the logical, linear causal chain of ERM (from objective setting to identifying risks to risk reaction to oversight to information and communication to internal environment and, finally, their cumulative impact on management decisions and, ultimately, performance). Figure 1 also shows that risk reaction is based on risk assessment and risk response and that oversight is based on control activities and monitoring. These two compound ERM concepts simplify the model, but do not reduce its explanatory power.

Each ERM concept's underlying variables is shown in Table 1. We measured the underlying variables on a five-point scale (with 1 as the lowest and 5 as the highest). From a statistical modeling perspective, all factor loadings and reliability values are satisfactory. These results validate our model.[18]

The first five hypotheses concern the initial linear, cumulative aspects of ERM. The results from the survey are statistically significant for all five hypotheses.

Hypothesis 1 posits a positive association between objective setting and risk identification, which is supported ($\beta = 0.65$, $p < 0.001$). Firms that align risks with objectives are better at risk identification.[19] When risks are viewed from a company-wide perspective and risk tolerances or limits are clearly defined and communicated throughout the hierarchy, it is easier to create an inventory of risks and for individual business units to implement the tools to evaluate and monitor these risks.

Hypothesis 2 posits a positive association between risk identification and risk reaction, which is supported ($\beta = 0.67$, $p < 0.001$). It is easier and more effective to react to risks if management has enumerated the possible risks along with the means to evaluate and quantify them. This facilitates discovering the root causes of these risks and the strategies needed to manage them.

Hypothesis 3 posits a positive association between risk reaction and oversight of risks, which is supported ($\beta = 0.74$, $p < 0.001$). Oversight gets better as risk reaction (root causes, assessments, etc.) improves. This phase involves formalizing written procedures for managing and monitoring major risks. The business units monitor and report on the status of key risks, and oversight gets better as risk reaction improves.

Hypothesis 4 posits a positive association between oversight and information and communication, which is supported ($\beta = 0.74$, $p < 0.001$). Thanks to these indicators, the company uses a common language to communicate about the range of risk exposure, the control activities, and the piloting of these efforts. Risk briefs to the board and executives improve as oversight improves.

Hypothesis 5 posits a positive association between information and communication and the internal environment, which is supported ($\beta = 0.78$, $p < 0.001$). As better risk information and communication is available, the internal environment improves and enables incorporating risk into mission statements and job responsibilities. Improved risk information and communication is also associated with a more active board.

The significance of the linear relationship between the first five hypotheses is important. Companies need to manage their risks and improve. As the model confirms, that leads to improved performance when companies first identify the risks associated with their objectives. That step is closely followed by reacting to the risk (e.g., assessing the risks) and then building an oversight and information process, which leads to an improved internal environment. Companies that try to build oversight and information processes that are not linked to the risk and objective aspects of the process may be less likely to get improved performance. This linear juxtaposition of the components of ERM shows that the value of ERM increases as these components are put in place.

Moreover, the linear juxtaposition of ERM components has a cumulative impact. As shown in Table 2, the total cumulative effect of the ERM components on internal environment is equal to the direct effect—that is, the influence of information and communication on internal environment—plus the indirect effects of each ERM component (objective setting, risk identification, risk reaction, oversight) on internal environment. Table 2 shows that these indirect effects on internal environment rise in a cumulative fashion at each successive ERM component. The indirect effects measure each latent variable's relative influence on the internal environment construct. In sum, the internal environment component of ERM is directly impacted by the information and communication component and indirectly

Table 2. Indirect Effects on Internal Environment

	Internal environment
Objective setting	0.189
Identification	0.288
Risk reaction	0.429
Oversight	0.575
Information and communication	0.777*

*Information and communication had a direct effect on a company's internal environment.

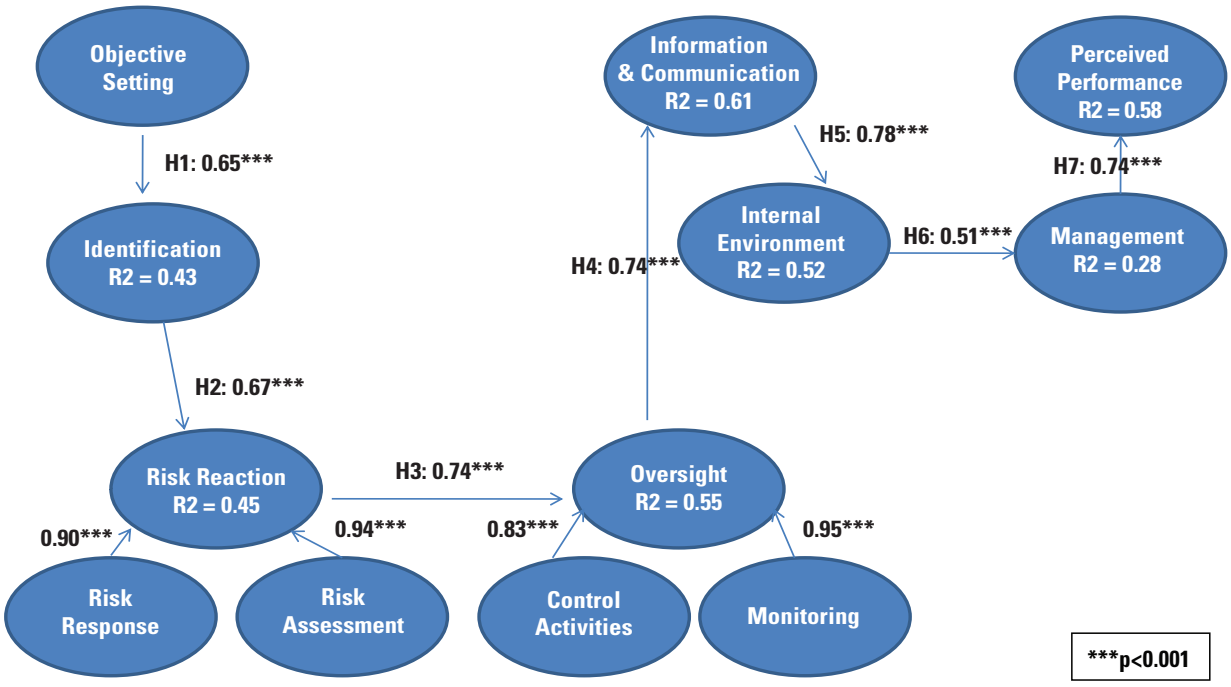
impacted by each of the preceding ERM components in the linear chain shown in Figure 1.

Hypothesis 6, which posits a positive relationship between internal environment and management, is also supported ($\beta = 0.51$, $p < 0.001$). As the internal environment improves, management improves in areas such as general management consensus, better-informed decisions, and increased accountability.

The model finds a 28% improvement in management. A significant finding, this result reveals that an ERM process leads to enhanced management of the company, including better-informed decisions, greater consensus, and better communication with management. Furthermore, it appears that it is not the process itself that is important. The real key is how the process enables management to manage the company.

Hypothesis 7 posits a positive relationship between enhanced management and improved perceived perfor-

Figure 1. Structural Model Results



mance. The results support this hypothesis ($\beta = 0.74$, $p < 0.001$). As management gets better, there are improved benefits of meeting strategic goals, reducing earnings volatility, and increasing profitability. This is also an important result. Our model shows that management should want to implement ERM to improve perceived performance. Yet the calls for greater risk oversight coming from governments and other regulatory agencies have been met with the same response that companies gave to government calls for increased controls and financial reporting: Companies complain of the costs associated with such programs. While this may be an understandable response, managers should want ERM because it improves their capability to manage.

The results show that none of the control variables had an impact on perceived performance, but companies outside the U.S. ($p < 0.01$), medium- and smaller-sized companies ($p < 0.001$), and companies in the process of implementing ERM ($p < 0.01$) are more likely to report improved management decisions from the ERM process. These significant results suggest that ERM may improve risk management more visibly in medium and smaller companies than in large companies. They may also suggest that improvements in risk management may occur most during the process of implementing ERM, when everyone sees that the process is advancing, instead of after ERM is in place and becomes part of an accepted routine. These control variable results pose interesting questions for future research.

The Importance of a Structured Approach

Our results show that the practical value of implementing an ERM process can be seen in both enhanced management and improved performance. In other words, the value side of ERM is that it makes management better. It leads to greater management consensus, better-informed decision making, and increased accountability. Better management translates into the increased ability to meet strategic goals, reduced earnings volatility, and increased profitability. Practically speaking, it is hard to imagine a management team or board of directors that would not want these benefits.

Following a structured and component approach to risk management leads to both enhanced management and improved performance. This approach is important because companies need to first identify risks before they can react to them. Similarly, once companies know the risks related to their objectives and begin to react, they can build better oversight and information processes related to the risks and, ultimately, make better decisions to create or protect value.

Our model also shows that the causal chain of an ERM process can lead to enhanced management and improved performance. Specifically, as companies implement an ERM process, the new knowledge it provides them about objectives, risks, oversight, information and communication, and the internal environment leads to enhanced management, as evidenced by increased management consensus, better-informed decisions, better communication with management regarding risk taking, and increased management accountability. This enhanced management, in turn, leads to improved performance.

Implications

ERM is hard to study because companies are not required to disclose their ERM processes. Even companies with some ERM disclosures may not fully reveal their components or stage of ERM implementation. Though there are limitations to our approach, we find some interesting and significant results. Not only are we first to document the relation between ERM components and value, but we are also the first to show that companies are getting value from implementing ERM.

The results suggest that an ERM framework and an ERM implementation can help companies improve performance by enabling executives to manage the company better. From a practical standpoint, companies ask how ERM adds value. Our results show that value comes from implementing the process, which then enables the company to make better decisions. Given that implementing the components takes time, companies should be patient with finding immediate value.

Our measures for enhanced management coincide with COSO's 2009 recommendations for strengthening ERM. Whereas COSO encourages interaction between management and board members to discuss risk management philosophy and risk appetite, we noted that enhanced management arises from the perceived bene-

fit of ERM on building management consensus about the risks it encounters. Developing a common understanding of risks, philosophy, and appetite among management and members of the board could facilitate deeper dialogue. Where COSO recommends a better understanding of risk management practices, our measure of perceived benefit of ERM from increased company management accountability suggests that it will be easier for management to explain to board members the key considerations of risks in relation to strategic objectives. Where COSO enjoins board members to know about the most significant risks and risk responses, our measure of the perceived benefit of ERM provides management with this capability by improving its ability to articulate and communicate risk taking to the board and outside stakeholders. Finally, where COSO recommends that board members review portfolio risks in relation to risk appetite, our measure of the perceived benefit of ERM on a company's ability to make better-informed decisions joins this most general objective of integrated risk management from ERM processes.

These results should be encouraging to company executives and boards that are trying to implement ERM processes and the related idea of risk oversight. Future research could explore the aspects of ERM and the value from the process. Numerous papers have attempted to measure value associated with corporate governance or balanced scorecards. Other studies could research similar approaches in ERM processes and disclosures. Future research could also study the other ERM framework components or compare COSO's ERM framework to other risk frameworks, such as ISO's risk framework. So that ERM survey and disclosure research is not just testing a simulacrum of ERM, additional field-based research should examine how companies are implementing ERM processes and what measures they change or create in order to measure and manage their risks. Another area for future research is international differences in ERM since numerous economies around the world either mandate or strongly suggest ERM and risk oversight. ■

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Endnotes

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18 Additionally, the reliability of every latent variable coefficient is satisfactory, particularly for second-order dimensions. All 26 measurement variables are clustered into 10 first-order dimensions: objective setting, identification, risk response, risk assessment, control, monitoring, information and communication, internal environment, management, and performance. These results confirm a 10-dimensional, first-order structure, whereas risk reaction and oversight are second-order factors related, respectively, to risk response and risk assessment for the former and to control activities and monitoring for the latter.

19 Beta measures the influence of objective setting on risk identification such that if the former increases by 10%, the latter would rise by 6.5%. $p < 0.001$ indicates that this influence is proven with a probability higher than 99.9%. All results reported here can be explained in a similar way.